

NON-PUBLIC?: N  
ACCESSION #: 9204070058  
LICENSEE EVENT REPORT (LER)

FACILITY NAME: J. M. Farley Nuclear Plant - Unit 2 PAGE: 1 OF 4

DOCKET NUMBER: 05000364

TITLE: Intermediate Range High Flux Reactor Trip During Shutdown For  
Refueling Outage  
EVENT DATE: 03/06/92 LER #: 92-002-00 REPORT DATE: 04/02/92

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 8 . 4

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR  
SECTION:  
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:  
NAME: D. N. Morey, General Manager - TELEPHONE: (205) 899-5156  
Nuclear Plant

COMPONENT FAILURE DESCRIPTION:  
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:  
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

#### ABSTRACT:

At 2307 on 3-6-92, during a rampdown for the 8th refueling outage, the reactor tripped on an intermediate range (IR) high flux level trip signal. The high flux level reactor trip signal from IR nuclear instrument NI-35 did not reset when power was reduced below the expected power level for trip reset. This resulted in a reactor trip from NI-35 when reactor power went below 10% power (P-10) causing the IR high flux trip to automatically reinstate.

The plant was stabilized in Mode 3 following the trip and the appropriate notifications were made.

The cause for the reactor trip was procedural inadequacy and personnel error. The unit operating procedure did not require the operators to verify the IR high flux trip reset prior to reducing power below 10

percent. Furthermore, the operating crew failed to recognize that the IR high flux trip had not reset. The unit operating procedure has been revised to require operators to check the bistables reset for the IR high flux trip before going below 10 percent reactor power. Appropriate procedures have been revised to increase the IR high flux trip reset setpoint to increase the likelihood of resetting the trip prior to reaching 10 percent reactor power. This incident will also be incorporated into the next cycle of licensed operator retraining scheduled to begin in September 1992. Farley Nuclear Plant experienced a similar event in October of 1990. The corrective action taken at that time was inadequate. The personnel responsible for corrective action with respect to the 1990 event have been counseled.

END OF ABSTRACT

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#### Plant and System Identification

Westinghouse - Pressurized Water Reactor

Energy Industry Identification System codes are identified in the text as XX!.

#### Summary of Event

At 2307 on 3-6-92, the Unit 2 reactor tripped on an intermediate range high flux level trip signal during the shutdown for the 8th refueling outage. The high flux level reactor trip signal from intermediate range instrument NI-35 did not reset when power was reduced below the expected power level for the trip reset and this was not detected by the operating crew. This resulted in a reactor trip from the NI-35 high power signal when the P-10 permissive/block cleared.

#### Description of Event

On 3-6-92, the Unit 2 reactor was being ramped down in preparation for the 8th refueling outage. When reactor power decreased below 10 percent and the P-10 permissive/block cleared, a reactor trip occurred on an IR high flux level signal from NI-35.

The reactor trip setpoint for the IR instruments is the detector current equivalent to 25 percent reactor power. Once the trip setpoint is reached, the trip does not reset until the current is below the reset setpoint (current equivalent to approximately 12.5 percent power). This trip is normally blocked by the operator when reactor power is above 10 percent. The trip is automatically unblocked when reactor power

decreases below 8 percent as indicated by the power range nuclear instruments. Either of the intermediate range instruments can initiate a reactor trip when the trip is unblocked.

The IR high flux level trip signal did not reset due to neutron flux shape redistribution over core life, which causes the IR to read higher than actual power. Thus, reset on the IR did not occur prior to the power range detectors reaching 8 percent power. Such redistribution is expected. Recalibration of the IR is not performed to account for flux redistribution since the effect on the IR indication is in the conservative direction.

The control room crew responded to the trip by completing the actions of the appropriate emergency response procedures ensuring the unit was safely in Mode 3. All appropriate notifications were completed.

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#### Cause of Event

This event was caused by procedural inadequacy and personnel error. The unit operating procedure did not require the operators to verify that the bistables for the IR high flux trip had reset prior to reducing reactor power below 10 percent. Furthermore, the operating crew did not recognize that the IR high flux trip signal had not reset. Farley Nuclear Plant experienced a similar event in October of 1990. As a result of the 1990 event, corrective action was proposed and approved under Incident Report (IR) 2-90-310 for Reactor Engineering to rescale IR high flux trip resets to flux levels corresponding to 16.7 percent power. However, Reactor Engineering and Operations personnel responsible for corrective action failed to implement this corrective action.

#### Reportability Analysis

This event is reportable because of the actuation of the Reactor Protection System. After the trip, the following safety systems operated as designed:

- main feedwater was isolated by automatic closure of the bypass flow control valves;
- auxiliary feedwater pumps started automatically and provided flow to the steam generators;
- source range nuclear detectors energized automatically; and

- pressurizer heaters and spray valves operated automatically as required to maintain system pressure.

There was no effect on the health and safety of the public.

#### Corrective Action

The unit operating procedures have been revised to require operators to check the bistables reset for the IR high flux trip before decreasing power below 10 percent reactor power. Appropriate procedures have been revised to increase the IR high flux trip reset setpoints to current equivalent of approximately 18.75 percent reactor power. This increases the likelihood of resetting the trip prior to reaching 10 percent reactor power. Personnel responsible for corrective action with respect to the previous similar incident have been counseled. This incident will be incorporated into the next cycle of licensed operator retraining scheduled to begin in September 1992.

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#### Additional Information

The 8th refueling outage began on March 6, 1992 following the reactor trip.

This event would not have been more severe if it had occurred under different operating conditions.

The following LERs involved intermediate range nuclear instrument reset values to flux levels corresponding to less than 8 percent reactor power: LER 84-002-00 Unit 1 and LER 90-003-00 Unit 2.

Following the trip on 3-6-92, Westinghouse proposed raising the reset to 18.75 percent, thereby further increasing the margin between the IR trip reset setpoint and permissive P-10. On 3-24-92, Unit 1 (currently operating at 100 percent power) raised the IR high flux trip reset setpoints to 18.75 percent in response to the corrective action of this LER. Revised reset currents will be developed and implemented for Farley Unit 2 during startup following the 8th refueling outage.

ATTACHMENT 1 TO 9204070058 PAGE 1 OF 1

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Telephone 205 868-5086

Southern Nuclear Operating Company  
the southern electric system  
J. D. Woodard  
Vice President  
Farley Project April 2, 1992  
10 CFR 50.73

Docket No. 50-364

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Joseph M. Farley Nuclear Plant - Unit 2  
Licensee Event Report No. LER 92-002-00

Gentlemen:

Joseph M. Farley Nuclear Plant, Unit 2, Licensee Event Report No. LER 92-002-00 is being submitted in accordance with 10 CFR 50.73. If you have any questions, please advise.

Respectfully submitted,

J. D. Woodard  
JDW/EFB:map 2182

Enclosure

cc: Mr. S. D. Ebnetter  
Mr. G. F. Maxwell

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